

Netzröhre für GW-Heizung  
indirekt geheizt  
Parallelspeisung  
DC-AC-Heating  
indirectly heated  
connected in parallel

# TELEFUNKEN

**6252**  
QQE 03/20

**Doppel-Tetrode**  
**Twin-tetrode**

**Doppel-Tetrode für HF-Verstärker bis 600 MHz und NF-Verstärker.**

Twin-tetrode for RF-amplifier and AF-amplifier.

|          |            |             |   |
|----------|------------|-------------|---|
| $U_{f1}$ | <b>6,3</b> | <b>12,6</b> | V |
| $I_f$    | 1,3        | 0,65        | A |

Oxyd-Kathode · Oxide-coated cathode

**Meßwerte · Measuring values**

je System bei  $I_a = 20$  mA

|             |     |      |
|-------------|-----|------|
| S           | 2,5 | mA/V |
| $U_{g2/g1}$ | 8   |      |

**HF-Verstärker, Telegraphie C-Betrieb**

RF-amplifier, telegraphy class C

System I und II in Gegentakt

System I and II push-pull

**Betriebswerte · Typical operation**

|          |            |            |            |            |            |            |            |            |     |
|----------|------------|------------|------------|------------|------------|------------|------------|------------|-----|
| f        | <b>200</b> | <b>200</b> | <b>200</b> | <b>200</b> | <b>400</b> | <b>400</b> | <b>400</b> | <b>600</b> | MHz |
| $U_a$    | <b>600</b> | <b>400</b> | <b>300</b> | <b>200</b> | <b>400</b> | <b>300</b> | <b>200</b> | <b>400</b> | V   |
| $U_{g2}$ | <b>250</b> | <b>250</b> | <b>250</b> | <b>200</b> | <b>250</b> | <b>250</b> | <b>200</b> | <b>250</b> | V   |
| $U_{g1}$ | -60        | -50        | -40        | -30        | -50        | -40        | -30        | -50        | V   |
| $N_e$    | 1,5        | 1          | < 1        | < 1        | 2          | 1,5        | 1          | —          | W   |
| $I_a$    | 2×50       | 2×50       | 2×50       | 2×50       | 2×50       | 2×50       | 2×50       | 2×50       | mA  |
| $I_{g2}$ | 8          | 8          | 9          | 8          | 5          | 5          | 6          | 5          | mA  |
| $I_{g1}$ | 2×0,7      | 2×0,7      | 2×0,7      | 2×1        | 2×0,7      | 2×0,6      | 2×0,5      | 2×0,7      | mA  |
| $N_a$    | 2×30       | 2×20       | 2×15       | 2×10       | 2×20       | 2×15       | 2×10       | 2×20       | W   |
| $Q_a$    | 2×6        | 2×5        | 2×4,5      | 2×3,5      | 2×8        | 2×6,5      | 2×4,5      | 2×10       | W   |
| $Q_{g2}$ | 2          | 2          | 2,2        | 1,6        | 1,2        | 1,2        | 1,2        | 1,26       | W   |
| N        | 48         | 30         | 21         | 13         | 24         | 17         | 11         | 20         | W   |
| $\eta$   | 80         | 75         | 70         | 65         | 60         | 57         | 55         | 50         | %   |

<sup>1)</sup> Bei »Bereitschaft« darf eine Heizfadenhälfte abgeschaltet werden.

One half of filament may be disconnected for »stand by«.



## Grenzwerte · Maximum ratings

|               |                |    |
|---------------|----------------|----|
| $U_a$         | <b>600</b>     | V  |
| $Q_a$         | <b>2 × 10</b>  | W  |
| $U_{g2}$      | <b>250</b>     | V  |
| $Q_{g2}$      | <b>3</b>       | W  |
| $-U_{g1}$     | <b>75</b>      | V  |
| $I_k$         | <b>2 × 55</b>  | mA |
| $I_{g1}$      | <b>2 × 2,5</b> | mA |
| $R_{g1}^{1)}$ | <b>50</b>      | kΩ |
| $R_{g1}^{2)}$ | <b>100</b>     | kΩ |
| $U_{f/k}$     | <b>100</b>     | V  |

<sup>1)</sup>  $U_{g1 \text{ fest}}$  · fixed grid bias

<sup>2)</sup>  $U_{g1 \text{ autom.}}$  · cathode grid bias



## Anoden- und Schirmgittermodulation, C-Betrieb

Anode and grid 2 modulation, class C

System I und II in Gegentakt

System I and II push-pull

### Betriebswerte · Typical operation

|                  |            |            |            |     |
|------------------|------------|------------|------------|-----|
| f                | <b>200</b> | <b>200</b> | <b>400</b> | MHz |
| U <sub>a</sub>   | <b>500</b> | <b>300</b> | <b>300</b> | V   |
| U <sub>g2</sub>  | <b>250</b> | <b>250</b> | <b>250</b> | V   |
| U <sub>g1</sub>  | -80        | -50        | -50        | V   |
| N <sub>e</sub>   | 3          | 1,5        | —          | W   |
| I <sub>a</sub>   | 2×40       | 2×40       | 2×40       | mA  |
| I <sub>g2</sub>  | 8          | 8          | 6          | mA  |
| I <sub>g1</sub>  | 2×1        | 2×1        | 2×1        | mA  |
| N <sub>a</sub>   | 2×20       | 2×12       | 2×12       | W   |
| Q <sub>a</sub>   | 2×4,5      | 2×3,5      | 2×5,5      | W   |
| Q <sub>g2</sub>  | 2          | 2          | 1,5        | W   |
| N                | 31         | 17         | 13         | W   |
| η                | 77,5       | 71         | 54         | %   |
| m                | 100        | 100        | 100        | %   |
| N <sub>moa</sub> | 20         | 12         | 12         | W   |

### Grenzwerte · Maximum ratings

|                  |              |    |
|------------------|--------------|----|
| U <sub>a</sub>   | <b>500</b>   | V  |
| Q <sub>a</sub>   | <b>2×10</b>  | W  |
| U <sub>g2</sub>  | <b>250</b>   | V  |
| Q <sub>g2</sub>  | <b>3</b>     | W  |
| -U <sub>g1</sub> | <b>100</b>   | V  |
| I <sub>g1</sub>  | <b>2×2,5</b> | mA |
| I <sub>k</sub>   | <b>2×50</b>  | mA |
| U <sub>f/k</sub> | <b>100</b>   | V  |

## Frequenzverdreifacher, C-Betrieb · Frequency tripler, class C

System I und II in Gegentakt

System I and II push-pull

### Betriebswerte · Typical operation

| f        | 66,7/200        | 133/400         | MHz |
|----------|-----------------|-----------------|-----|
| $U_a$    | 300             | 300             | V   |
| $U_{g2}$ | 250             | 250             | V   |
| $U_{g1}$ | -175            | -175            | V   |
| $N_e$    | 2               | 4               | W   |
| $I_a$    | $2 \times 45$   | $2 \times 45$   | mA  |
| $I_{g2}$ | 6               | 5,6             | mA  |
| $I_{g1}$ | $2 \times 1,5$  | $2 \times 1,2$  | mA  |
| $N_a$    | $2 \times 13,5$ | $2 \times 13,5$ | W   |
| $Q_a$    | $2 \times 8,5$  | $2 \times 9,5$  | W   |
| $Q_{g2}$ | 1,5             | 1,4             | W   |
| N        | 10              | 8               | W   |
| $\eta$   | 37              | 29,5            | %   |

### Grenzwerte · Maximum ratings

|               |                |            |
|---------------|----------------|------------|
| $U_a$         | 600            | V          |
| $Q_a$         | $2 \times 10$  | W          |
| $U_{g2}$      | 250            | V          |
| $Q_{g2}$      | 3              | W          |
| $-U_{g1}$     | 200            | V          |
| $I_{g1}$      | $2 \times 2,5$ | mA         |
| $I_k$         | $2 \times 50$  | mA         |
| $R_{g1}^{1)}$ | 50             | k $\Omega$ |
| $R_{g1}^{2)}$ | 100            | k $\Omega$ |
| $U_{f/k}$     | 100            | V          |

<sup>1)</sup>  $U_{g1 \text{ fest}}$  · fixed grid bias

<sup>2)</sup>  $U_{g1 \text{ autom.}}$  · cathode grid bias



## NF-Verstärker in B-Betrieb, Modulator

### AF-amplifier class B, modulator

System I und II in Gegentakt · System I and II push-pull

#### Betriebswerte · Typical operation

|                  |                 |                 |                 |                  |            |
|------------------|-----------------|-----------------|-----------------|------------------|------------|
| $U_a$            | <b>300</b>      |                 | <b>500</b>      |                  | V          |
| $U_{g2}$         | <b>250</b>      |                 | <b>250</b>      |                  | V          |
| $U_{g1}$         | -25             |                 | -26             |                  | V          |
| $R_{aa}$         | 11              |                 | 20              |                  | k $\Omega$ |
| $U_{g1sp/g1lsp}$ | 0               | 50              | 0               | 52               | V          |
| $I_a$            | $2 \times 12,5$ | $2 \times 35$   | $2 \times 12,5$ | $2 \times 36,5$  | mA         |
| $I_{g2}$         | 1,2             | 19              | 0,7             | 16,2             | mA         |
| $N_a$            | $2 \times 3,75$ | $2 \times 10,5$ | $2 \times 6,25$ | $2 \times 18,25$ | W          |
| $Q_a$            | $2 \times 3,75$ | $2 \times 3,9$  | $2 \times 6,25$ | $2 \times 6,5$   | W          |
| $Q_{g2}$         | 0,3             | 4,75            | 0,18            | 4,05             | W          |
| N                | 0               | 13,2            | 0               | 23,5             | W          |
| $\eta$           | —               | 63              | —               | 63,5             | %          |
| k                | —               | 3,5             | —               | 3,5              | %          |

#### Grenzwerte · Maximum ratings

|               |                                 |            |
|---------------|---------------------------------|------------|
| $U_a$         | <b>600</b>                      | V          |
| $Q_a$         | <b><math>2 \times 10</math></b> | W          |
| $U_{g2}$      | <b>250</b>                      | V          |
| $Q_{g2}^{1)}$ | <b>3</b>                        | W          |
| $-U_{g1}$     | <b>75</b>                       | V          |
| $I_k$         | <b><math>2 \times 55</math></b> | mA         |
| $R_{g1}^{2)}$ | <b>50</b>                       | k $\Omega$ |
| $R_{g1}^{3)}$ | <b>100</b>                      | k $\Omega$ |
| $U_{f/k}$     | <b>100</b>                      | V          |

<sup>1)</sup> Bei Vollaussteuerung max. 6 W  
 At full drive

<sup>2)</sup>  $U_{g1 \text{ fest}}$  · fixed grid bias

<sup>3)</sup>  $U_{g1 \text{ autom.}}$  · cathode grid bias

## HF-Einseitenbandverstärker, B-Betrieb

Single sideband amplifier, class B

$$I_{g1} = 0$$

System I und II parallel geschaltet

System I and II connected in parallel

### Betriebswerte · Typical operation

Einzelton · Single sound  $f = 30 \text{ MHz}$

|                   |            |      |            |
|-------------------|------------|------|------------|
| $U_a$             | <b>600</b> |      | V          |
| $U_{g2}$          | <b>225</b> |      | V          |
| $U_{g1}^{1)}$     | -26,5      |      | V          |
| $R_L$             | 4          |      | k $\Omega$ |
| $U_{g1sp}$        | 0          | 24   | V          |
| $I_a$             | 27         | 86   | mA         |
| $I_{g2}$          | 1          | 10   | mA         |
| $N_a$             | 16,2       | 51,6 | W          |
| $Q_a$             | 16,2       | 18,8 | W          |
| $Q_{g2}$          | 0,23       | 2,25 | W          |
| $N_{sp}^{2)}$     | 0          | 33,2 | W          |
| $N_{Lsp}^{2) 3)}$ | 0          | 30   | W          |

### Grenzwerte · Maximum ratings

$f \leq 250 \text{ MHz}$

|               |                                 |            |
|---------------|---------------------------------|------------|
| $U_a$         | <b>600</b>                      | V          |
| $Q_a$         | <b><math>2 \times 10</math></b> | W          |
| $U_{g2}$      | <b>225</b>                      | V          |
| $Q_{g2}$      | <b>3</b>                        | W          |
| $-U_{g1}$     | <b>75</b>                       | V          |
| $I_a$         | <b><math>2 \times 55</math></b> | mA         |
| $R_{g1}^{4)}$ | <b>50</b>                       | k $\Omega$ |
| $R_{g1}^{5)}$ | <b>100</b>                      | k $\Omega$ |
| $U_{f/k}$     | <b>100</b>                      | V          |

<sup>1)</sup> Für  $I_a = 27 \text{ mA}$  einstellen · adjust for  $I_a = 27 \text{ mA}$

<sup>2)</sup> Leistung beim Scheitelwert der Hüllkurve · power at peak value of envelope power

<sup>3)</sup> Kreiswirkungsgrad 90% · circuit efficiency 90%

<sup>4)</sup>  $U_{g1 \text{ fest}}$  · fixed grid bias

<sup>5)</sup>  $U_{g1 \text{ autom.}}$  · cathode grid bias



## Kapazitäten · Capacitances

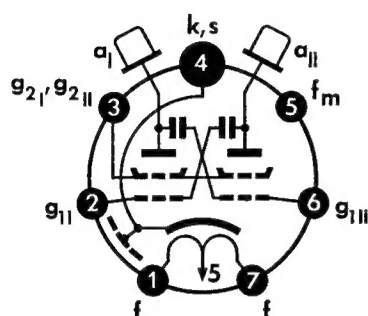
ein System · one System

|       |     |    |
|-------|-----|----|
| $c_e$ | 7   | pF |
| $c_a$ | 2,6 | pF |

in Gegentaktschaltung · push-pull circuit

|       |     |    |
|-------|-----|----|
| $c_e$ | 4,4 | pF |
| $c_a$ | 1,6 | pF |

Sockelschaltung  
Base connections



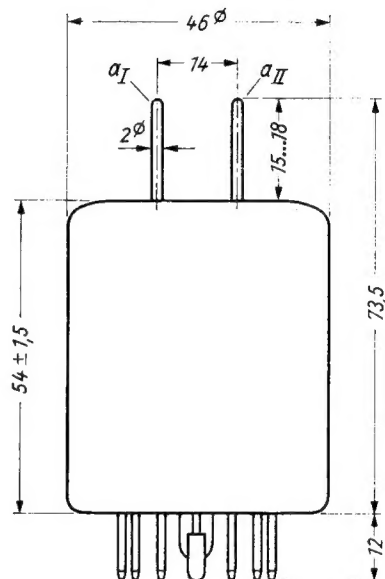
Septar

Sockel  
Base 7-25 nach DIN 41 601

Fassung  
Socket Lager-Nr. 30 239  
stock-no. 30 239

Kühlklemmen  
Cooling clips Lager-Nr. 30 566  
stock-no. 30 566

max. Abmessungen  
max. dimensions



Gewicht · Weight  
max. 55 g

Einbau · Mounting position beliebig · arbitrary

Temperatur der Einschmelzungen max. 180 °C

Fusing temperature

Kühlung · Cooling

Im allgemeinen ist natürliche Kühlung ausreichend bis:  
In general cooling up to ratings given below  
is naturally adequate:

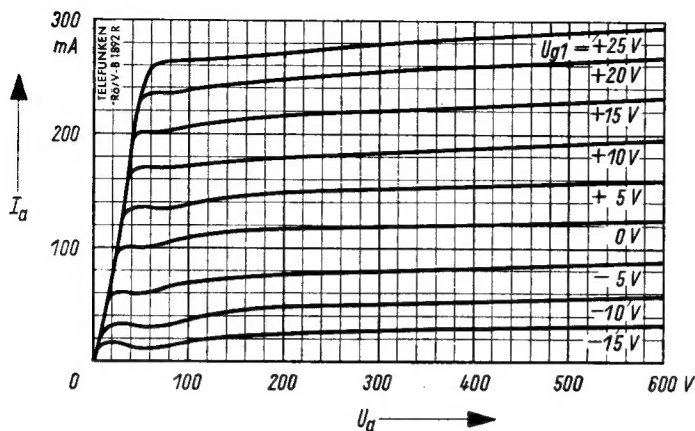
$U_a = 600 \text{ V}$  bei  $f \leq 150 \text{ MHz}$

$U_a = 500 \text{ V}$  bei  $f \leq 200 \text{ MHz}$

$U_a = 300 \text{ V}$  bei  $f \leq 430 \text{ MHz}$

Oberhalb dieser Grenzen und/oder bei hohen Umgebungstemperaturen kann ein Luftstrom von ca. 15 l/min auf die Oberseite des Kolbens erforderlich werden, damit die max. zulässige Temperatur der Einschmelzungen nicht überschritten wird.

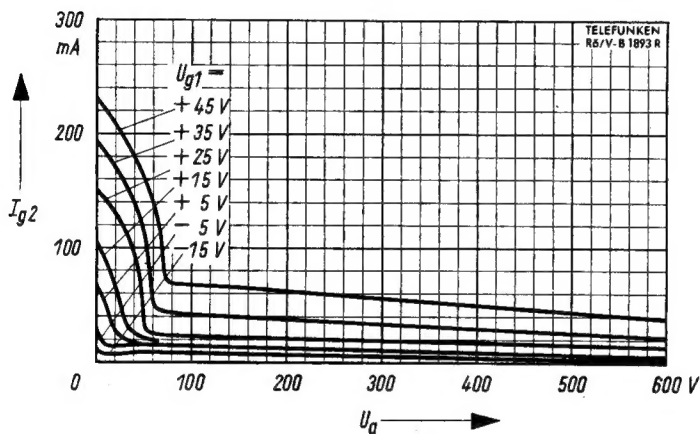
Above this limit or at high ambient temperatures an air current of approx. 15 l/min may have to be directed at the envelope top in order that the maximum fusing temperature is not exceeded.



$$I_a = f(U_a)$$

$$U_{g2} = 200 \text{ V}$$

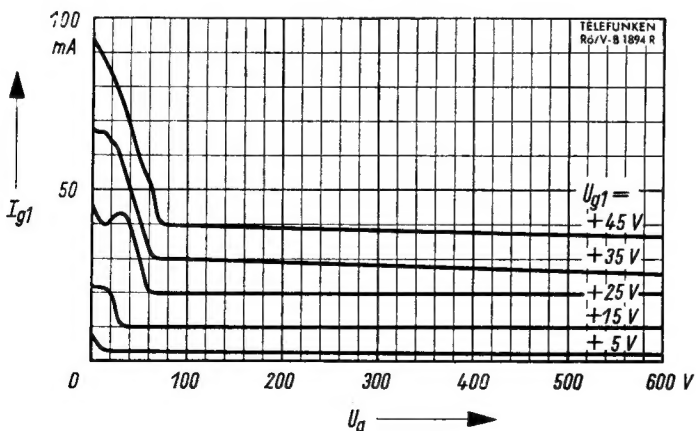
$$U_{g1} = \text{Parameter}$$



$$I_{g2} = f(U_a)$$

$$U_{g2} = 200 \text{ V}$$

$$U_{g1} = \text{Parameter}$$



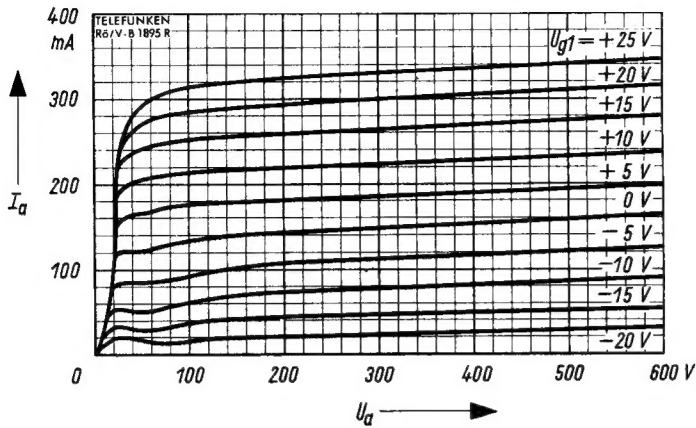
$$I_{g1} = f(U_a)$$

$$U_{g2} = 200 \text{ V}$$

$$U_{g1} = \text{Parameter}$$



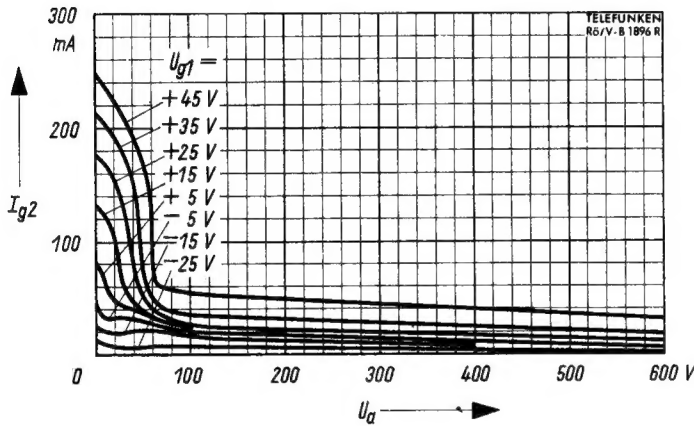




$$I_a = f(U_a)$$

$$U_{g2} = 250 \text{ V}$$

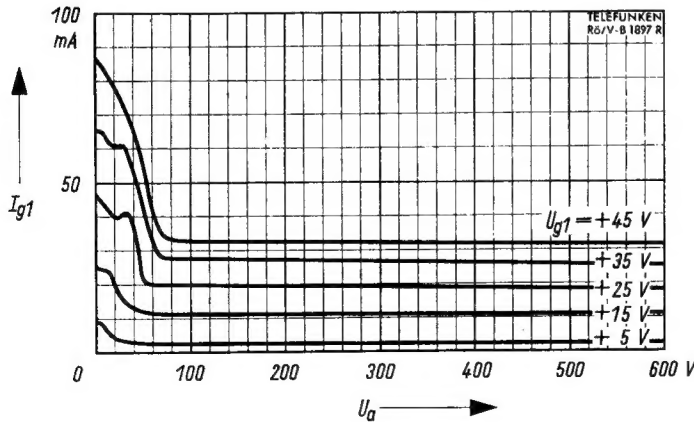
$$U_{g1} = \text{Parameter}$$



$$I_{g2} = f(U_a)$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = \text{Parameter}$$

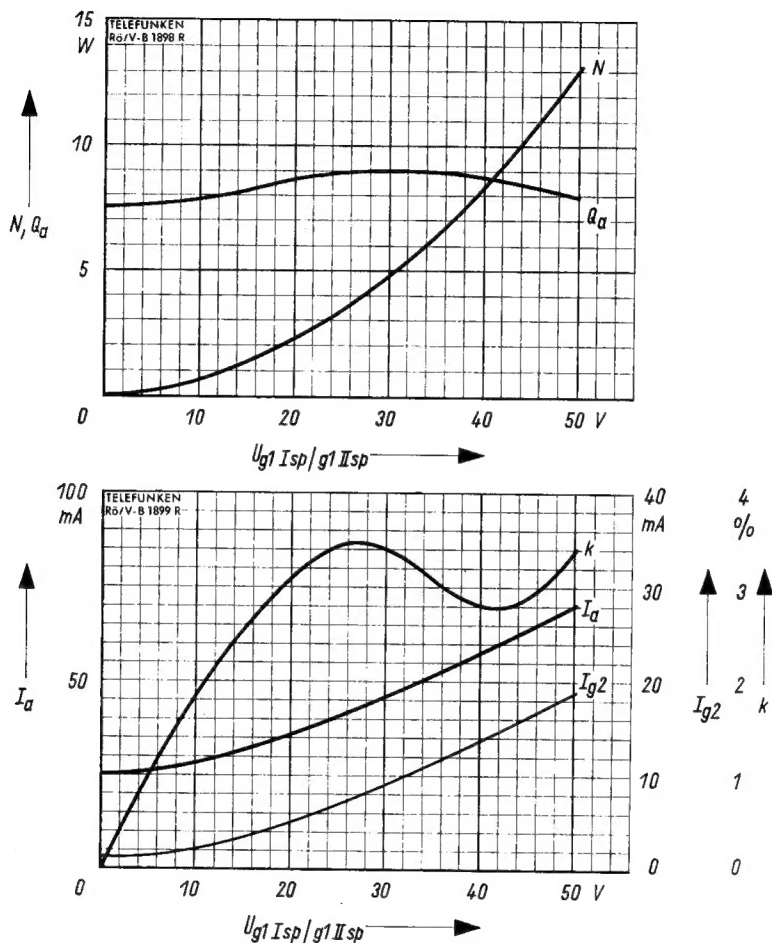


$$I_{g1} = f(U_a)$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = \text{Parameter}$$





## NF-Verstärker in B-Betrieb, Modulator

AF-amplifier class B, modulator

System I und II in Gegentakt

System I and II push-pull

$$N, Q_a, I_a, I_{g2}, k = f(U_{g1} I_{sp} / g_{11} I_{sp})$$

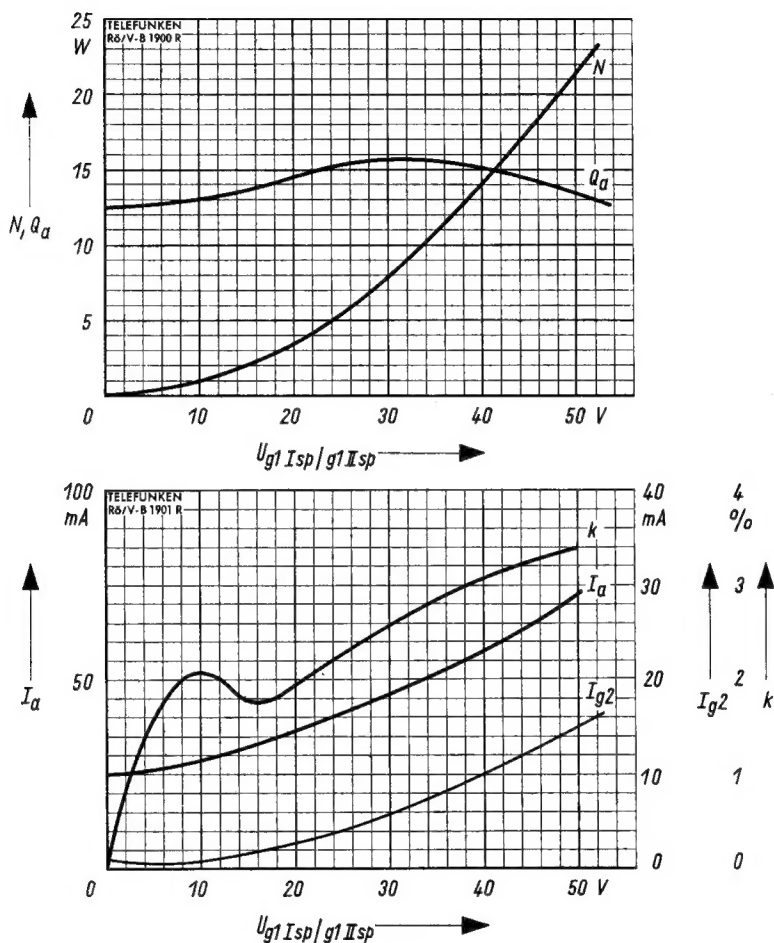
$$U_a = 300 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = -25 \text{ V}$$

$$R_{aa} = 11 \text{ k}\Omega$$





## NF-Verstärker in B-Betrieb, Modulator

AF-amplifier class B, modulator

System I und II in Gegentakt

System I and II push-pull

$$N, Q_a, I_a, I_{g2}, k = f(U_{g1sp}/g_{11}I_{sp})$$

$$U_a = 500 \text{ V}$$

$$U_{g2} = 200 \text{ V}$$

$$U_{g1} = -26 \text{ V}$$

$$R_{aa} = 20 \text{ k}\Omega$$

